

PAṆINI'S THEORY OF SUBSTITUTION AND DERIVATION OF VERBAL FORMS

I. THEORY OF SUBSTITUTION

Linguistic elements, grammatical or phonological, are found to alternate with one another in grammatical constructions. Such elements, though formally different, are equivalent functionally. Environments of their occurrence are mutually exclusive unless these are in free variation (cf. 3194). For example, the elements *e*; *ya*; *smai* and *am* are all distinct phonological units but functionally these are equivalent as all of these denote 4th *vibhakti* singular. These occur in their respective environments described in 7113-4 and 7128. A few illustrative examples are: *sarit-e* « for the river »; *devā-ya* « for the god »; *sarva-smai* « for all »; *mahy-am* « for me », etc. In such a group of alternants one of them, for reasons not made explicit by Pāṇini, is recognized as *sthānī*, original, and the rest are treated as its *ādeśa*, substitutes. Here *e* (represented lexically as *ñe*) is considered as *sthānī*. All others are its *ādeśa*. It is important to note that each of these, including *sthānī*, has its distinct environments. Similarly at phonological level the nominal form *madhu* and *madhv* show alternation between *u* and *v* in such expressions as *madhu pibati* « he drinks honey » and *madhv asti* « there is some honey ». Here *u* is considered as *sthānī* and *v* its *ādeśa*. Their substitution is not arbitrary. Environments of their occurrence are stated explicitly in 6176.

Pāṇini, however, is not always consistent in recognizing structural relationship of *ādeśa* and *sthānī* among a group of linguistic elements even though requisite requirements i.e. phonological uniqueness; functional equivalence and exclusiveness of environments of their occurrence are met with. Consider, for instance, the *tad-dhita* suffixes *aṇ* = *a*; *vuñ* = *aka*; *yat* = *ya*; *ṭhañ* = *ika*; *yan* = *ya*; *tal* = *ta*; *añ* = *a*; *ṭhak* = *ika*; *yañ* = *ya*; *cha* = *īya*; *ya*; *ini* = *in*; *tra* and *kaṭyac* = *kaṭya*. Functionally these denote « a collection thereof » (4237-51). Each of these occurs after specific stems. Phonologically these are treated as distinct which fact is denoted by their lexical representations. Thus these constitute a group where substitutional relationship could be recognized. But Pāṇini does not do that. On the other hand, the *vikaraṇa* suffix *cli* is set up as *sthānī* with alternants such as *sic*; *kṣa*; *cañ*; *añ* and *ciñ*, although it has no environments specific to itself. In fact *cli* is nothing more than a covering term for these elements (3144-66). It appears Pāṇini recognizes structural relationship of *ādeśa* and *sthānī* only among such entities that felicitate his grammatical description.

Sthānī and ādeśa

Pāṇini does not define formally the terms *sthānī* and *ādeśa*. Perhaps he considers these terms as self-explanatory. In any case their connotation is not disputed. However, it is pertinent to inquire what considerations possibly weigh with him to pick up one element rather than the other as *sthānī* from among a group of linguistic elements bound in structural relationship as described above. The question does not appear so simple. Groups of grammatical entities which show alternation are of miscellaneous types. These differ in their roles in linguistic organization. For example, for *bhū* and *as*, both meaning « to be », the question may be easy to decide. Both contrast in all environments except before *ārdha-dhātuka* suffixes where only *bhū* shows up (2452). *as* defaults there. Its role is taken up by *bhū*. Thus *as* in *sthānī* in whose place *bhū* is substituted. The same consideration may hold good for the group consisting of *ad*, *jagdh* and *ghas*. Here *ad* is treated as *sthānī* (2436-2440). It is, however, a different story with the group constituted

of *ku*; *kat*; *kā* and *kava* (63100-107). No decision with regard to selection of *sthānī* can be forced here. This group differs significantly from that consisting of *bhū* and *as*. Here all the members occur in their respective environments. None could be treated as deficient in its distribution. Pāṇini picks up here *ku*, perhaps because it has wider range of occurrence. That was not possible in case of *as* and *bhū*. On the contrary one with narrower range has been set up as *sthānī* there. Treatment of *asmad* « I » etc. as *sthānī* is quite intriguing. For purposes of substitution it is split into parts, namely *asm*; *a*; *ad* and *d*. Each one is replaced by such elements as *aha*; *āva*; *vaya*; *mahya*; *ma*; *ā*, zero etc. in specific environments. There is no parity between these elements and *asmad*. Obviously here there is no choice but to treat *asmad* as *sthānī* (7286-98). It may be said that in general felicity of description and economy in statements are the main considerations in selecting one of the members of a group as *sthānī*.

We may notice that whatever entity, syntactic, morphological or phonological, is picked up as *sthānī*, it is assigned to the category of constituents that are considered basic at a particular level of linguistic organization. And substitutes, in turn, derive their *raison d'être* and structural status from their being replacements of particular entities that have acquired, for being *sthānī*, a distinct formal identity and definite structural role of their own. *ktvā* = *tvā*, for example, belongs to the basic stock of *kṛt* suffixes. The entity *lyap* = *ya* replacing it, on the other hand, is a non-entity grammatically. It enjoys no inherent status as a structural unit. Only as a substitute of *ktvā*, it comes to acquire a place in the grammatical system. Likewise *mā*, *me*, *naḥ* etc. as substitutes of *mām*; *mahyam*; *asmākam* etc. participate in syntactic constructions (8120-3). So also *ru* = *r* belongs nowhere in phonological system of the language. Through *s* etc. which it replaces, it is represented in the sound system of the language (8266). In a chain of substitutions, however, an *ādeśa* may take up the role of *sthānī* at intermediary levels of derivation. For instance, *śnā* = *nā*, a substitute of *śap* (3181), assumes the role of *sthānī* and is replaced by *śānac* = *āna* or *śāyac* = *āya* (3183-4). So also *ru* = *r*, a substitute of *s* etc., is

substituted by *visarjanīya* (8315) which in turn may act as *sthānī* and be replaced by *x* or \emptyset (8337).

As alluded to above, the entities *bhū*, *as*, *i*, *y* etc. though occurring as *sthānī* and *ādeśa*, have their respective formal identities and structural roles in the system in their own right. Here substitutional relationship is among equals.

Structural relation between ādeśa and sthānī

Formally an *ādeśa* and its *sthānī* are two disparate entities. Structurally, however, these are neither identical nor too distinct. A unique sort of relationship obtains between them. Pāṇini's description of their relationship is too short and cryptic. He simply observes that an *ādeśa* is like its *sthānī* (*sthānī-vad ādeśaḥ*) (1456). It implies that an *ādeśa* gets invested with all the grammatical properties of its *sthānī* in the environments in which it replaces it. A *sthānī* may have wide range of functions. Its *ādeśa* takes up in its behalf only such functions which appertain to specific environments where they change places. Outside of these environments an *ādeśa* has no locus standi vis-à-vis the *sthānī*. For instance, *śa* = *a*, a substitute of *śap* = *a*, functions only before *sārvadhātuka* suffixes denoting *kartā* construction after *tud*-class of verbal stems (3177). Outside these environments, it has no reason to exist. However, there is another class of substitutes, e.g. *vac* which replaces *brū* « to speak » before *ārdhadhātuka* suffixes (2453). Outside these environments both *brū* and *vac* have their independent roles. Thus *vac* and *brū* are related as *ādeśa* and *sthānī* only in the relevant environments. But in case of the other type of entities e.g. *lyap* etc., these occur in the system only as *ādeśa*.

There is an important exception to the above relationship between *ādeśa* and *sthānī*. Pāṇini points out that an *ādeśa* is not considered equivalent to its *sthānī* in the matter of phonological operations triggered by its *sthānī* (*nānalvidhau*) (1456). There are, nevertheless, exceptions and counter-exceptions to this general observation. These details are not pertinent to our present discussion which is confined to their grammatical roles only. For a clearer

understanding of their relationship, we may better discuss below an example in its relevant details.

Consider replacement of *ktvā* = *tvā* by *lyap* = *ya* as described in 7137. It is stated here that in a compound *lyap* = *ya* replaces *ktvā* = *vā* if the prior member is an *avyaya* other than *nañ* = *na*. The entity *ktvā* is a *kṛt* suffix and occurs after verbal stems in the meaning and environment explained in 3421. Thus adding it to the stem *kṣip* « to throw », we obtain the form *kṣip-tvā* « having thrown ». In a compound formation, as stated above, *ktvā* is replaced by *lyap*. Thus *kṣip-tvā* compounded with *pra* is realized as *pra-kṣip-ya* « having thrown away » by substituting *ya* in place of *tvā*.

Here *ya* and *tvā* are related as *ādeśa* and *sthānī*. Thus *ya* is to be treated like *tvā*. What it means in terms of structure is that *ya*, a grammatical non-entity otherwise, acquires the same status as *tvā* by virtue of its being a substitute of *tvā*, a *kṛt* suffix. It is now treated as if it were a *kṛt* suffix. In anticipation of this, Pāṇini invests it with the diacritics *l* and *p* which otherwise are attached only to grammatical entities proper. It is recognition of its being admitted to all the privileges that *tvā* is entitled to. Derivatives ending in *ya* like those of *tvā* are *kṛdanta* and thus *prātipadika* (1246) and *avyaya* (1140). These take nominal suffixes as *prātipadika* (411) although these are later dropped by *luk* because of their being *avyayas* (2482). These are recognized as *padas* (1414) and thus, are entitled to participate in *tat-puruṣa* compound formations (2218-2222) and also in other constructions (cf. 3418; 3459 etc.).

Similarity in the behavior of *ādeśa* and *sthānī*, as pointed out above, extends only to grammatical operations. With regard to their involvement in phonological operations the two are treated as unrelated and disparate entities. For instance, *tvā* as an *ārdhadhātuka* suffix beginning with a consonant of *val*-class i.e. any consonant other than *y*, takes initially the augment *iṭ* = *i* when it comes after any verbal stem (7235). From *has-tvā* we get *has-itva* « having laughed » by prefixing the augment *i* to *tvā*. But on the other hand, when *has-itvā* is compounded with *vi* and *tvā* is replaced by *ya*, instead of *vi-has-iya*, the compound form realized is *vi-has-ya* « having laughed loudly ». Here the *ādeśa*, *ya* does not in-

herit phonological properties of its *sthānī*, *tvā* and is, thus, not entitled to prefixation of the augment *i*.

The *ādeśa* may also effect phonological changes specific to it. For example, the augment *tuk* = *t* is added finally to a verbal stem ending in a short vowel before *lyap* = *ya* (6170). From *śru* « to listen » we have *śru-tvā* « having heard » but *prati-śrut-ya* « having promised » when *ya* replaces *tvā* in a compound. Similarly we have *smṛ-tvā* « having remembered » but *anu-smṛt-ya* « having recollected » with the augment *t* added finally to *smṛ*.

Here we may discuss Pāṇini's statement 2436 as it has important bearing on substitutional theory. Herein Pāṇini states that *ad* « to eat » is replaced by *jagdh* before *ārdhadhātuka* suffixes *lyap* = *ya* and those beginning with *t* and having *k* as *it*. This includes *ktvā* = *tvā* also. As discussed above *lyap* and *ktvā* are related as *ādeśa* and *sthānī*. The question arises why there is separate mention of *lyap* when it occurs in the grammatical constructions only as substitute of *ktvā*. Substitution of *ad* by *jagdh* which occurs in any case before *ktvā* ipso facto secures it before *lyap* also. Moreover *lyap* attains the status of *ārdhadhātuka* suffix only after its substitution in place of *ktvā* and not before that. And *lyap* replaces *ktvā* at the stage of derivation when *ad* has already been replaced by *jagdh*. Further the environments of occurrence of *lyap* and *ktvā* are mutually exclusive. It seems, thus, preposterous to maintain theoretically that an *ādeśa* can share environments with its *sthānī* as the statement under discussion implies.

The commentators do concede the point that substitution of *ad* by *jagdh* is secured for *lyap* by *ktvā*. They, however, maintain that separate mention (though not justified in theory) is necessitated to indicate that *lyap* blocks even internal operations (*antarāṅgān api vidhīn bahiraṅgo lyab bādhate* Mbh on 2436). The internal operations alluded to here are the ones described in 7440-7. Of these substitution of *it* = *i* for the final segment of verbal stems, obligatorily or optionally, before suffixes beginning with *t* and having *k* as *it* may better be treated as a phonological operation (7440-1). Replacement of *dhā* « to place » and *hā* « to abandon » by *hi* and *dā* by *dad* (7442-4; 7446) (and also *śās* by *śā*, *han* by *ya* 6435-6) is not at a par with substitution of *ad* by *jagdh* or *ghas*; *han* by

vadha; as by *bhū* etc. (2436 etc.). We notice a significant structural difference between two types of replacements. In case of the former a grammatical entity is substituted by another. The entity *hi* like *jagdh* or *vadh* etc. is not a verbal stem in its own right. The element *hi* acquires the status of a verbal stem only after its substitution in place of *dhā* or *hā* as the case may be. Thus such replacements are confined only to the environments in which these take place and do not extend automatically to those environments where *ktivā* is replaced by *lyap*. The *iṭ* augment prefixed to *ktivā* in *has-itvā* etc. is not carried over to its substitute *lyap*. Likewise substitution of *it* = *i* in place of the final segment in, say, *so* is not carried over to *ya* substitute of *tvā*. Thus we may justifiably have *si-tvā* « having finished etc. » and *ava-sāya* « having finished etc. »; *hi-tvā* and *vi-hā-ya* « having abandoned »; *hi-tvā* « having placed » and *vi-dhā-ya* « having done » etc. Thus there does not seem any conflict between *ktivā* and *lyap* with regard to application of relevant operations which to all intents and purposes are phonological in nature.

If the above interpretation is accepted, then, there is no justification to make a separate mention of *lyap* in 2436. In any case conditioning of a substitution simultaneously by a *sthānī* and its *ādeśa* is an oddity theoretically.

To sum up: Pāṇini's theory of substitution may be characterized as follows:

1. Two or more formally distinct linguistic entities are related structurally if these are functionally equivalent and occur in mutually exclusive environments. One of these is called *sthānī*, original and the rest its *ādeśa*, substitutes.
2. Functional identity of an *ādeśa* with its *sthānī* in specific environments rules out its substitutional relationship with any other grammatical entity.
3. Unconditional and obligatory substitution implies free variation.
4. There is complete structural fit (accord) between *ādeśa* and *sthānī*. An *ādeśa*, thus, does not acquire any grammatical property not there in its *sthānī*.

5. An *ādeśa* is also semantically equivalent to its *sthānī*. Neither it drops any semantic feature that is there in its *sthānī* nor does it acquire any additional one non-existent therein.
6. A *sthānī* is not employed as an abbreviatory symbol or designatory label for its *ādeśa* and vice-versa.

II. VERBAL FORMS

Verbal forms in the language are identified formally by their endings. These fall into eleven paradigmatic sets, each set containing two varieties distinguished by types of endings. These are called *parasmaipada* and *ātmanepada*. These display distinctions of three persons and three numbers and various tenses and modes. Verbal forms also give us information regarding types of syntactic constructions these participate in. Forms made from a verbal stem may be 99 or 198 depending on the fact whether it is inflected in one *pada* or both. Below we give 1st person singular denoting active construction from *kṛ* « to do » which is inflected in both the *padas*. Glosses are eschewed.

	<i>parasmaipada</i>	<i>ātmanepada</i>
1.	<i>karomi</i>	<i>kurve</i>
2.	<i>karavāṇi</i>	<i>karavai</i>
3.	<i>kuryām</i>	<i>kurvīya</i>
4.	<i>kariṣyāmi</i>	<i>kariṣye</i>
5.	<i>kartāsmi</i>	<i>karatāhe</i>
6.	<i>kriyāsam</i>	<i>kṛṣīya</i>
7.	<i>cakāra</i>	<i>cakre</i>
8.	<i>akaravam</i>	<i>akurvi</i>
9.	<i>akariṣyam</i>	<i>akariṣye</i>
10.	<i>akārṣam</i>	<i>akṛṣi</i>
11.	<i>karāmi</i>	<i>karavai</i>

Structure of verbal forms

Verbal forms are transparent in their structure. Main constituents are stems and inflectional suffixes. For instance, a

verbal form like *yāti* « he goes » may be segmented into *yā*, a verbal stem meaning « to go » and *ti*, an inflectional suffix denoting categories of *pada*; person, number, tense and voice (syntactic construction). On the other hand, a form like *akariṣyam* « had I done » is analysed into *a*, *kar*, *i*, *sya*, and *m*. Here *kar* is an alternant of the root-stem *kr* « to do »; *m* is inflectional suffix; *a* is an augment prefixed to the stem; *sya*, a *vikaraṇa* suffix (thematic element) and *i* another *āgama*. Induction of *vikaraṇa* suffix *sya* and augment *a* is conditioned by inflection suffixes after and before a stem respectively while insertion of *i* by the *vikaraṇa* suffix *sya*.

Formation of verbal forms

In the formation of verbal forms, the first task is to identify basic constituents, verbal stems and inflectional suffixes. Stems are either roots or derivatives. Both types are called *dhātus*. About 2000 roots are listed in an appendix called *dhātupāṭha*. Formation of derivatives from roots and nominal stems is explained in the grammar. There is, thus, no mistaking about what verbal stems mean in Pāṇini.

Identification of inflectional suffixes is not so simple and straightforward. Initially Pāṇini recognizes ten basic suffixes, namely *laṭ*; *liṭ*; *luṭ*; *ḷṭ*; *leṭ*; *loṭ*; *laṇ*; *liṇ*; *luṇ* and *ḷṇ*. Here *liṇ* is homophonous and denotes two which are normally distinguished as *vidhi* and *āśir*. Thus finally we end up with 11 distinctions. Collectively these may be called *lakāras*.

These are substituted obligatorily by identical set of 18 elements, namely *tip*, *tas*, *jhi* etc., abbreviated as *tiṇ*. These may further be substituted by their alternants. In the final run the eleven basic suffixes multiply to 198 elements occurring in eleven sets of paradigms of 9 forms each.

The matter does not end here. In this context Pāṇini makes use of another term, namely, *l* or *la*. The way it has been described and interpreted traditionally, we are not sure of its precise nature and function in the verbal system. One thing, however, is clear that

it is *lakāra*-suffixes and not *la* that figure in Pāṇini's derivation of verbal forms¹.

1. (a) The term *la* is introduced first in 1499 which reads *laḥ parasmai-padam*. It may be interpreted as 1st *vibhakti* singular from *la* or 6th singular from *l*. The *Kāśikā* opts for the latter. The crucial question, apart from its *vibhakti* form, is what it means. According to the *Kāśikā* it means substitutes of *l* which is interpreted by it as common appellation of all the *lakāra*-suffixes. Thus it comes to signify *tiñ* listed in 3478 as substitutes of *la* (*lādeśāḥ*). The second set of 9 of these as well as the *kṛt* suffixes *āna* i.e. *śānac* substitute of *laṭ* and *lṭ* and *kānac*, substitute of *liṭ* are called *ātmanepada* (14100). By implication the first set, called *parasmaipada*, includes *śaṭṛ* = *at*, substitute of *laṭ* and *lṭ* and *kvasu* = *vas*, substitute of *liṭ*.

(b) Next the term occurs in 2369 as *la* in a compound. It signifies the *kṛt* suffixes *śaṭṛ*; *śānac*; *kānac*; *kvasu*; *ki* and *kin*. Of these *śaṭṛ* etc. are substitutes of *laṭ* etc. as mentioned above. *ki* = *i* and *kin* = *i* are treated as *liṭ*. Syntactic peculiarity of *la* as denoting these suffixes is that a nominal ending in these suffixes holding *kartā* or *karma* relation with a verbal stem, is not represented by 6th *vibhakti*.

Here we have a situation where *śaṭṛ* etc., on the one hand, are described by Pāṇini as substitutes of *laṭ*, *lṭ* and *liṭ* (32124; 3314; 32106-32107) and, on the other, as denoted by *la*. Thus *la* and of the *lakāras* *laṭ*, *lṭ* and *liṭ* come to be related structurally. This statement is the only direct reference of structural relationship between *la* and any *lakāra*-suffixes. Here *la*, however, designates only *kṛt*-suffixes.

(c) Again in 3469 the term occurs as *laḥ*. It may be taken as 1st *vibhakti* singular as *kṛt* in 3467. In that case the statement describes that *la* denotes the syntactic constructions *kartā* and *karma* occurring after transitive stems and *kartā* and *bhāva* after intransitive. The term *la* is to be identified with *tiñ* which are described by Pāṇini as denoting various syntactic constructions (1313-4; 1378).

The *Kāśikā*, however, takes *laḥ* as 1st *vibhakti* plural from *l*, interpreted as short-hand term of all the *lakāra*-suffixes (as it does in 3477 also). Thus according to *Kāśikā* it is *lakāra*-suffixes as such which denote distinctions of syntactic constructions.

(d) Once again the term occurs in 3477 which reads *lasya*. There is no ambiguity about the stem which is *la* and the *vibhakti* which is 6th. It simply means «in place of *la*». The following statement enumerates the elements *tip*, *tas*, *jhi* etc. which are to be substituted in place of *la*.

What does *la* denote here? Is it a unitary inflectional suffix or a common appellation for the ten suffixes *laṭ lañ* etc.? The *Kāśikā* takes it as a common designation of all the *lakāras*. Here *l* is the element common to all of them and *a* is added for felicity of pronunciation.

From the above it is clear that the term *l* or *la* does not have any precise and definite connotation. In traditional interpretation it is used as a common designation for the ten *lakāra* suffixes in one context and in other contexts as a term to denote *tiñ* and also the *kṛt* suffixes *śaṭṛ* etc. In other words it stands for *stihānī* when used as a name for the *lakāras* and *ādeśa* when it denotes *tiñ* and *kṛt* suffixes. Further it is associated with represen-

However we proceed on the assumption that basic inflectional suffixes recognized by Pāṇini are *laṭ*, *laṅ*, *liṅ* etc.

With the identification of basic constituents, namely stems and inflections, the way is clear to proceed to derive verbal forms. Inflectional suffixes are introduced after stems in the context of semantic notions such as *vartamāna* « present » (32123); *an-adya-tana bhaviṣyat* « non-current future » (3315); *āśir* « benediction » (33173) etc. After adding appropriate suffixes to stems, say *paṭh* « to study » etc., formal structural strings like *paṭh-laṭ*; *paṭh-laṅ*; *paṭh-liṅ* etc. are produced. To complete a derivation, however, further operations involving substitution of inflectional suffixes, insertion of elements called *vikaraṇa* and *āgama* need be carried out. Verbal stems are also replaced by their alternants in certain constructions.

Derivation is thus, not a straight and unidirectional process. Appropriate environments of application of an operation may have to be secured by prior application of another. These operations, within the confines of initial strings, interact variously. Thus no fixed order of their application could be decided upon. Substitution of stems (limited to roots), for instance, is carried out at different stages of derivation in particular cases. The root *han* is replaced by *vadha* before the *ārdhadhātuka* suffixes (2435; 2442). Thus *han* before *liṅ* cannot be replaced unless we have already classified inflectional suffixes into *ārdhadhātuka* and *sārvadhātuka* types. And such a classification in turn assumes substitution of *lakāra*-suffixes by *tiṅ* (cf. 34113-6). Again replacement of *han* by *vadha* before *luṅ* as stated in 2443-44 can take place only when *luṅ* has been replaced by its *parasmaipada* or *ātmanepada* substitutes and the *vikaraṇa* suffix *cli* introduced before *luṅ* is substituted by *sic*. Replacement of *luṅ* by *tiṅ* substitutes is needed initially to start the process. Similarly environments of replacement of *han* by *ja* before *hi* (6436)

tation of different sets of categories in different contexts. It denotes distinctions of *pada*, *parasmaipada* and *ātmanepada* and those of person and number when it denotes *tiṅ* (1499-102) (*kṛt* suffixes *śaṭṛ* etc. have to be excluded somehow or other from these *padas* when describing distinctions of person and number). Again as common designation of *lakāras* it denotes distinctions of syntactic constructions (3469) and various tenses and modes (3477). Thus it involves multiple interpretation and multiple representation of categories.

are secured after the initial string *han-loṭ* has passed through several stages.

lakāra and tiṅ

Now we may deal with inflectional suffixes and their substitution and examine how far substitutional relationship between *sthānī* and *ādeśa* is upheld at different stages of derivation.

(a) We have stated above how a *lakāra* suffix is introduced after a verbal stem in the environment of semantic notions that express distinctions of tenses and modes. And in traditional interpretation each *lakāra*-suffix is replaced by an identical set of 18 suffixes, *tiṅ*. Substitutional relation between *lakāra*-suffixes and *tiṅ* is that of *sthānī* and *ādeśa*. In terms of substitutional theory as explained above, environments of occurrence of *sthānī* and its *ādeśa* have to be different and mutually exclusive. A *sthānī* may have one or more *ādeśas*. But environments of each one have to be different from all others. And environments of *sthānī* have to be specific to itself. Above we have referred to the nominal inflectional suffix *ne* = *e* and its substitutes. All of these including *ne* occur in their respective environments i.e. after different classes of *prātipadikas*. But here in case of substitution of a *lakāra*-suffix by *tiṅ*, there is no mention of any conditioning environments. Substitution is unconditional and at the same time obligatory. A *lakāra*-suffix is replaced by its substitutes once for ever. No more after its substitution do we hear of the *lakāra*-suffix in any environment.

Again take, for example, the relationship between, *ktivā* and *lyap*. Both are related as *sthānī* and *ādeśa*. As such these occur in their respective environments in derivatives. Structural relations between, say, *laṭ* and *tiṅ* is also described as that of *sthānī* and *ādeśa*. But *laṭ* does not show up any longer once it is replaced by *tiṅ*. There are no two sets of environments specific to each of them. In fact both share identical environments. Thus structural relation between them cannot be characterized as that of *sthānī* and *ādeśa*. For such a relationship it is incumbent to have mutually exclusive environments as *ktivā* and *lyap* have.

Nor can we concede that *lakāra*-suffixes and *tiṅ* are in free variation as the *kṛt*-suffixes *ṇvul* = *aka* and *tṛc* = *tṛ* etc. are in the derivatives *vikṣep-aka* and *vikṣep-tṛ* « one who scatters about » (cf. 31133 etc.).

Our insistence on relating *lakāra*-suffixes and *tiṅ* as *sthānī* and *ādeśa* goes counter to what such relationship entails in terms of 1456. We may have to abandon traditional interpretation and take a second look at the facts.

(b) Further an *ādeśa* has to be like its *sthānī* in its grammatical behaviour. The *lakāra*-suffixes, as alluded to above, denote distinctions of various tenses and modes. Do *tiṅ* as substitutes of these denote these relations? But Pāṇini nowhere in his grammar accredits *tiṅ* to denote such distinctions. Moreover how could *tiṅ*, identical substitutes of all the *lakāra*-suffixes, be equivalent in their grammatical behaviour to their *sthānīs*, different from one another?

Further *tiṅ* elements, on the other hand, denote distinctions of *pada*, *parasmaipada* and *ātmanepada*; three persons and three numbers (1499-102). These distinctions are not ascribed to the *lakāra*-suffixes in Pāṇini. How can then an *ādeśa* acquire additional distinctions not inherent in its *sthānī*? It is against the very assumptions of substitutional theory.

(c) By interpreting *la* in 3477 as a common appellation for *laṭ*, *laṇ* etc. and in 1499 as *tiṅ* (*lādeśāḥ*), the *Kāśikā* unwittingly designates *tiṅ* by *lakāra*-suffixes. Neither a *sthānī* nor *ādeśa* can designate one another. The two are always distinct, though functionally similar. The root *ad* « to eat », for example, does not include its substitute *jagdh* and *ghas* or vice versa (2436-7).

(d) Again in defining *sārvadhātuka* type of inflectional suffixes the *lakāra*-suffixes other than *liṭ* and *liṇ* denoting « benediction » are subsumed under *tiṅ* (34113). But *tiṅ* as substitute of all the *lakāras* is not warranted to denote its *sthānī*. Further use of *sārvadhātuka* in 3167-8 is made to denote their *sthānī* *laṭ*, *laṇ*, *loṭ* and *liṇ* (*vidhi*) only.

(e) Inflectional suffixes constitute as one of the environments conditioning insertion of *vikarāṇa* and *āgama* elements. Pāṇini's use of *ṭ*, *ṇ*, *ṇ* etc. in this context is simply in lieu of *tiṅ*, their com-

mon substitutes. The terms *ātmanepada* (3154); *parasmaipada* (3155; 34103); 1st person (3492); *sārvadhātuka* (3167) etc. obviously refer to *tiñ*. For example, *luñ ātmanepada* can refer to *ta*, *ātām*, *ta* etc. only. Particular *tiñ* suffixes are identified by either naming them e.g. *ta* in 3160 etc. or by describing their phonological features e.g. beginning with *t* or *th* (34107). Narrower range of scope of these suffixes is denoted by qualifying these suitably, e.g. *luñ* denoting *kartā* (3148); *sārvdhātuka* denoting *kartā* or *karma* and *bhāva* or *kartā* (3167-8); *ta* denoting *kartā* (3160); *karmakartā* (3162) or *karma* and *bhāva* (3166). Thus use of *lakāras* and *tiñ* in this context do not reflect their substitutional relationship. Rather *lakāras* are used here as short-hand name for their substitutes, *tiñ*.

A close scrutiny of Pāṇini's statements here indicates that his use of *lakāras* or their substitutes *tiñ* types, is a distinction without any structural implications².

2. However structurally an anomalous situation is created by Pāṇini's statements describing occurrence of both *siyut* and *suṭ* before *ātmanepada* substitutes of *liñ* beginning with *t* or *th*. In this context the commentators interpret *lakāra* and *tiñ* as two distinct grammatical entities. Let us study the facts.

In 34102 Pāṇini states that *siyut* = *siy* is prefixed to *ātmanepada* substitutes of *liñ* while according to 34107 *suṭ* comes before those *ātmanepada* substitutes of *liñ* that begin with *t* or *th*. His first statement i.e. 34102 is a more generalized statement. It includes those *ātmanepada* substitutes of *liñ* which begin with *t* or *th*. The statement 34107 is an exception to the above. It relates only to those suffixes which begin with *t* or *th*.

The statements as these stand have structural implications that create difficulties in the way of formation of correct forms. A specific statement blocks application of a general statement. Moreover in case of conflict a later statement overrides application of earlier statement (142). Thus insertion of *siyut* before substitution of *liñ* beginning with *t* or *th* is blocked.

Pāṇini leaves things at that. The *Kāśikā* commenting on 34107 attempts to reconcile these two statements by pointing out that the augment *siyut* is prefixed to *liñ* while *suṭ* to those *ātmanepada* substitutes of *liñ* that have *t* or *th* initially. Thus the two rules have their respective scopes and the question of conflict does not arise (*liñ-sambandhinos takāra-īhakārayoḥ suḍā-gamo bhavati. takāra-īhakārāv āgaminau, liñ tad-viśeṣaṇam. siyutas tu liñ evāgamī. tena bhinna-viśayatvāt suḍā bādhanaṁ na bhavati*).

The explanation offered by the *Kāśikā* is not warranted by facts. The *ātmanepada* substitutes of *liñ* implied in 34102 cannot be conceived of apart from *ta*, *ātām*, *jha* etc. And these do include those beginning with *t* or *th*.

Explication of variants of *tiñ*

We notice that in the derivation of verbal forms *tiñ* elements, which replace *lakāra*-suffixes obligatorily and unconditionally, are substituted in their turn by various alternants. For instance, Pāṇini in *er uḥ* (3486) states that *i* occurring in *tiñ* elements that replace *loṭ*, is substituted by *u*. The statement identifies which *i* is to be substituted by *u*. It, however, does not tell us anything about the environments under which substitution takes place. The same *i* occurs in a *tiñ* that replaces a *lakāra*-suffix having *ñ* as *it* and belongs to the *parasmaipada* set. Here it is dropped obligatorily (3499). In substitutional process mention of environments of substitution, thus, becomes very crucial. The verbal stem *han* « to kill » is replaced by *vadha*. Environments of its replacement are described explicitly in 2442. Likewise environments of replacement of *hi* (variant of *sip*) by *dhi* are stated in 64101.

To consider *loṭ* as sufficient environment under which substitution of *i* by *u* takes place is, to say the least, to overlook the structural relation between *liṭ* and, say, *ti* or *jhi* (where *i* occurs). We may remind ourselves that these are related as *sthānī* and *ādeśa*. To account for substitution of an *ādeśa* in terms of its *sthānī* is negation of their substitutional relationship. A conditioning envi-

To postulate *liñ* and its *ātmanepada* substitutes in the context as two distinct entities is, thus, not justified. In fact this is an after-thought on the part of the *Kāśikā*. Commenting on 34102 it observes that *siyut* is prefixed to the substitutes of *liñ* (*liñ-ādeśānām siyut-āgamo bhavati*). The augment *siyut* does not come before *liñ* but rather it comes before its *ātmanepada* substitutes. How do then we explain the formation, for example, of the verbal form *lapsiṣṭa* « may he obtain » from the root *labh* « to obtain » and *ta*, *ātmanepada* third person singular substitute of *liñ*?

A plausible alternative explanation may be considered here. The *ātmanepada* *liñ*-substitutes having *t* or *th* initially have two roles at two different levels of structure. At morphological level these behave as members of *ātmanepada* set of suffixes. In this role these condition induction of *siyut*. At phonological level the segments *t* or *th* initially in the substitutes condition induction of *suṭ*. Thus introduction of two augments in seemingly identical environments remains no longer a puzzle if we recognize the conditioning element functioning in two roles at two different levels of structure. It remains, however, an enigma if we insist on recognizing them related simply as *sthānī* and *ādeśa*.

ronment has to be different from both, the *sthānī* and its *ādeśa*. Moreover, *sthānī* and *ādeśa* by definition do not co-exist in a construction. As soon as a *sthānī* is replaced by its *ādeśa*, it is no longer available there any more. Thus in the statements describing alternations of *tiñ*, there is conspicuous absence of mention of any environments under which substitution is supposed to take place. To illustrate Pāṇini's process of derivation as understood traditionally, we may discuss below in detail how a form like *pacasva* « (you) cook for yourself » is formed.

The derivative process takes its start with the selection of the verbal stem *pac* « to cook » and introduction of the suffix *loṭ* after it in the meaning « to direct, invite etc. » (33162). We thus have the initial string *pac-loṭ*.

Next the suffix *loṭ* is substituted by one of the 18 suffixes listed in 3478. Which one? The choice rests with the speaker. In the present case *thās* is selected since the speaker addresses the person standing before him, second person singular (14101-2) and wants fruit of action to accrue to him (1372).

It may be pointed out that *thās* is the only choice for second person singular in *ātmanepada* set for any of the *lakāra*-suffixes including *loṭ*. In fact at this stage of derivation all the *lakāra*-suffixes *laṭ*, *lañ* etc. are substituted by an identical element for a particular person and number in a set. Tense-mode distinctions ascribed to *laṭ*, *lañ*, *loṭ* etc. are not reflected in their substitutes formally. The string *pac-thās*, thus, may be interpreted to denote any of the various distinctions of tense and mode. However, by considering *thās* as substitute of a particular suffix, it is assumed that it denotes that particular distinction. The string in itself is neutral to representation of any specific distinction.

To proceed further in the derivation, we need know what syntactic construction, *kartā*, *karma*, *bhāva* or *karma-kartā*, it denotes and which suffix type, *sārvadhātuka* or *ārdhadhātuka*, it belongs to. There is no inherent feature in *thās* that could decide the issue for us. It is *ārdhadhātuka* if it is a substitute of *liṭ* or *liñ* denoting benediction (*āśīr*) (34115-16). Otherwise it is *sārvadhātuka* (34113). In the present context *thās* is *sārvadhātuka* as it replaces *loṭ*. As to representation of syntactic constructions by in-

flexional suffixes, nature of verbal stems is also taken into consideration. All stems are capable of participating in *kartā* construction. However, only transitive and intransitive stems participate in *karma* and *bhāva* constructions respectively (3469). And only particular type of transitive stems alone participate in *karma-kartā* construction. And constructions are denoted by inflectional suffixes. The set of suffixes called *ātmanepada* alone denote *karma*, *bhāva* and *karma-kartā* (1313; 3187). Within these limitations the speaker may opt for one of these. The stem *pac* is transitive. It qualifies to denote *kartā*, *karma* and *karma-kartā*. We proceed on the assumption that the speaker opts for *kartā*.

Once these issues are cleared, the verbal stem is entitled to have the thematic element *śap = a* after it before *thās*, a *sārvadhātuka* suffix denoting *kartā* (3168). With the addition of the thematic element the string *pac-thās* changes to *pac-a-thās*.

Still there are no formal features that mark out the string *pac-a-thās* as denoting exclusively « direction etc. ». It could as well denote « present » if *thās* is considered a substitute of *laṭ*.

Although *thās* may replace any and every *lakāra* suffix in *ātmanepada* 2nd person singular, but when it is substituted for *laṭ*, *liṭ*, *luṭ*, *ṛiṭ*, *leṭ* and *loṭ*, it is replaced by *se* (3480). We have, thus, *pac-a-se* in place of *pac-a-thās*.

The process of substitution continues. An *e* preceded by *s*, if it belongs somewhere in the line of substitutions of *loṭ*, is replaced by *va* (3491). Thus replacing *e* by *va*, we obtain *pac-a-sva*. The process of substitution stops here. It is the end of our journey. We have obtained the desired form.

We may pause here and reflect. Derivative process, as explained above, involves successive substitutions of inflectional suffixes. The basic suffix *loṭ*, in the example under discussion, is replaced by *thās* which in turn is replaced by *se* and *e* of *se* by *va*.

In the process of substitution at any level of linguistic organization three elements are involved, namely *sthānī*, the element which is to be replaced; *ādeśa*, the element that replaces *sthānī* and linguistic or non-linguistic environments under which substitution takes place. Thus conditioning environments have to be apart from *sthānī* and *ādeśa*. Nor *sthānī* or its *ādeśa* by nature of their struc-

tural relationship could act conditioning factors. The suffix *loṭ*, thus, cannot serve as conditioning factor of its substitute or their substitutes further down in the line. As Pāṇini's statements mention only *sthānī* and *ādeśa*, conditioning factors are conspicuously wanting therein. Substitution at every stage of derivation seems to be obligatory and context-free. Thus in the absence of any structural constraints on substitutional operations, one is not sure how to proceed and where to stop. You cry halt only when you come to have a form that matches with one that is found in actual language. The series of substitutions in the above derivation could be truncated a step earlier at *pac-a-se* if we intended to produce a form denoting « present ». In that case *se* is considered a substitute of *thās* that replaces *laṭ* instead of *loṭ*. Substitutions are, thus, manipulated obviously with the full knowledge of forms to be produced. Grammatical statements purported to produce these forms appear simply crude and unprincipled devices providing no structural insight into their formation. The grammatical royal path for verbal formation is designed as if to bend, provide loops, branch off or terminate as it suits its wayfarer. There are no traffic controls. Pāṇini seems to be solely intent on arriving at the destination, already known well to him, by the shortest route. Generalized statements in this regard are seemingly unreal and illusory. These run palpably counter to his own theory of substitution.

III. ANOTHER LOOK

Above we have described formation of verbal forms according to traditional interpretation of Pāṇini. We have pointed out there how structural relations between constituents and their substitutes are vitiated variously in this interpretation. One gets an impression that Pāṇini is concerned more with the pragmatics of the system he builds up rather than with its theoretical consistency and finesse. Pāṇini could have never intended to create a structural chaos. We need have another look at the facts given in Pāṇini.

The system Pāṇini builds up to explicate structure and formation of verbal forms is obviously based on linguistic data and its analysis. Verbal forms in the language are identifiable in terms of

their endings. On the basis of their functions these fall into eleven paradigms. Forms in each paradigm are sorted out into two varieties keeping in view their inflectional endings. In each paradigm there are two sets of nine forms each denoting distinctions of three persons and three numbers. Each paradigm as a whole expresses distinction of some tense or mode.

Formally these forms are analysable into verbal stems; inflectional suffixes and the elements called *vikaraṇa*, thematic elements and *āgama*, augments. Of these stems and inflectional suffixes are considered basic and, thus, form nucleus of derivation of a form. The *vikaraṇa* and *āgama* may occur in a form. Their occurrence is conditioned by either of the basic constituents.

It is suggested that the terms *laṭ*, *laṇ*, *liṭ* etc. in Pāṇini are names of various paradigms and inflectional suffixes occurring therein as well. The forms *apaṭhat*, *apaṭhatām*, *apaṭhan* etc. and *avartata*, *avartetām*, *avartanta* etc. constitute two sets for the paradigm called *laṇ* denoting « non-current past » (3211). The term *laṇ* also stands for the sets of inflectional suffixes, namely *t*, *tām*, *an* etc. and *ta*, *ātām*, *anta* etc.

Even in other contexts a *lakāra* is used as a designation for its substitutes as realized in the final run. For instance, in 215 he uses the expression *liṭ apit*. The expression does not apply directly to *liṭ* which is neither *pit* nor *apit*. Obviously it stands here for its *parasmaipada* substitutes excluding those for *tip*, *sip* and *mip* which have a *p* as *it*. These are enumerated in 3482.

Now to account for occurrence of *vikaraṇa* or *āgama* elements etc. Pāṇini's statements are interpreted accordingly. For example, the statement 3133 is interpreted to state that *vikaraṇa sya* comes after verbal stems in the paradigms called *liṭ* and *liṇ* before all suffixes denoted by them. A *vikaraṇa* inserted before suffixes of a particular variety or some specific suffixes denoting any particular syntactic construction, is identified suitably. Examples are: the *vikaraṇa caṇ* occurs after specific group of stems in the paradigm *luṇ* when these suffixes denote *kartā* construction (here suffixes of both the varieties are meant) (3148); *aṇ* comes after another group of stems before *parasmaipada* set of suffixes denoting *kartā* in the same paradigm (3155); *ciṇ* comes before the suffix *ta*, *ātmanepada*

3rd person singular denoting different constructions after different groups of stems in the paradigm *luṇ* (3160-66); *yak* comes before *sārvadhātuka* type of suffixes i.e. in paradigms *laṭ*; *laṇ*, *loṭ* and *liṇ* (*vidhi*) when these denote *karma* and *bhāva* constructions (3167) etc.

Similarly in explicating occurrence of *āgāmas* the term *leṭ*, *liṇ* etc. are designations of paradigms and suffixes found therein. The augment *aṭ* or *āṭ* occurs initially with the suffixes of both the varieties in the paradigm *leṭ* (3494); *aṭ* is prefixed to the 1st person suffixes of both the varieties in the paradigm *loṭ* (3492); *yāsuṭ* prefixed to *parasmaipada* suffixes in the paradigm *liṇ* (both *vidhi* and *āśir*) (34103); *suṭ* is attached initially to suffixes of both varieties beginning with *t* or *th* in the paradigm *liṇ* (34107) etc. (See Foot-note 2 also).

A look at paradigms reveals that quite a few of inflectional suffixes are shared by some of these either in toto or partially. For example, suffixes in the paradigms *laṭ* and *ḷṇ* are common. And so are in *laṇ* and *ḷṇ* and in both varieties of *liṇ*. The *parasmaipada* suffixes *tām*, 3rd person dual; *tan*, 2nd person singular; *ta*, 2nd person plural and *ām*, 1st person singular are common in paradigms ending in *ṇ* i.e. *laṇ*; *ḷṇ*; *liṇ* and *luṇ* (34101). Some of the suffixes in paradigms in *laṇ* and *loṭ* are shared (3485). In his statements Pāṇini does take notice of such suffixes which are shared by any of these paradigms.

Pāṇini realizes structural significance of this fact. He sees a unique opportunity of achieving generalizations in his statements describing verbal forms. The vast variety of inflectional suffixes (198 distinctions in all) are collapsed just into 18, 9 for each *pada*. Now it remains for him to demonstrate that these 198 distinctions are nothing but grammatical variants of these 18 basic generalized elements occurring in well-defined environments.

The 18 suffixes i.e. *tip*, *tas*, *jhi* etc., listed in 3478, are morphological units at theoretical level. These are common to all paradigms where these are replaced by their variants. These denote categories of *pada*; person, number and syntactic constructions, common to all paradigms. However, within a paradigm a particular variant may denote more than one syntactic construction. Such a

representation (which may look an oddity) is a fact of usage. For example, in the paradigm *luṇ*, the *ātmanepada* 3rd person singular variant *ta* denotes the categories of *kartā* and *karma-kartā* after particular stems and those of *karma* and *bhāva* after all stems (3160-66). There is nothing to be surprised at. Linguistic structures are not logical syllogisms.

Pāṇini needs a term, a label to signify these entities. He employs the expression *la* (with *a*) for this purpose. Thus *la* is a name, a designatory label for *tiṇ* suffixes in Pāṇini. It is not an inflectional suffix in its own right nor a label common for all *lakāras*. Its use is confined only to few contexts where either he refers to these suffixes or is to describe features relating to them (cf. 1499; 3469; 2369 and 3477). Pāṇini's use of 6th *vibhakti* with *la* in 3477 may be interpreted as « in place of *la* » in conformity with the meaning of 6th *vibhakti* as given in 1149 (*ṣaṣṭhī sthāneyogā*). However its obligatory and unconditional replacement by *tip*, *tas*, *jhi* etc. indicates that it is synonymous with these elements. There are obvious difficulties for treating it as a unitary suffix or as a common designation for *lakāras*. We have already touched upon this aspect of the problem. We have also pointed out that in 2369 it is used to denote certain *kṛt* suffixes which are either variants of *tiṇ* occurring in particular paradigms or such *kṛt* suffixes which are treated as equivalent to such variants in these paradigms.

Formal environments conditioning occurrence of variants of *tiṇ* are provided by various paradigms designated as *laṭ*, *laṇ* etc. For instance, the final syllable (*ṭī*) of *ātmanepada* suffixes is replaced by *e* in paradigms having *ṭ* as *it* i.e. *laṭ*, *liṭ*, *luṭ*; *ḷṭ* and *loṭ* (3479). Thus *ta* changes to *te*; *ātām* to *āte* etc. by replacing the last syllables *a*; *ām* etc. by *e*. The *ātmanepada* 3rd person plural suffix *jha* is substituted by *ran* in the paradigm *liṇ* (34105). All the *parasmaipada* suffixes in *liṭ*-paradigm are replaced by *ṇal*, *atus*, *us* etc. (3482). A variant thus obtained in a paradigm may be replaced again in specific environments. For instance, the *ātmanepada* 1st person suffixes *i*; *vahi* and *mahi* changing to *e*; *vahe* and *mahe* respectively by 3479 change again to *ai*; *vahai* and *mahai*. Here *e* of 1st person in the paradigm *loṭ* changes to *ai* (3493).

It may be pointed out that inflectional suffixes may be sub-

stituted by their variants in some other environments also. For example, the suffix *hi* obtained by replacing *si* in the paradigm *loṭ* (3487) is replaced by *dhi* when it occurs after the stem *hu* « to sacrifice » or after a stem ending in a consonant of *jhal*-class (64101), e.g. *chind-hi* becomes *chind-dhi* « you cut ». Again *hi* is dropped after a stem ending in *a* (64105), e.g. *paṭh-a-hi* goes to *paṭha* « (you) study ».

To conclude: Organization of derivational process of verbal forms is conceived by Pāṇini at three levels. At the highest level these are looked upon as constituted of stem and inflection, two abstract notions. These are respectively called *dhātu* and *la* by him. The structure is, thus, represented as *dhātu* plus *la*, abstract and generalized (3191; 3477).

As he proceeds further, *dhātus* are specified as roots and derivatives (131; 3132) and *la* as *tip*, *tas* *jhi* etc. (3478). These are divided into two classes of nine each, called respectively *parasmaipada* and *ātmanepada* (1499-100). The suffixes denote the grammatical categories of person, number and voice, common to all verbal forms. Although the *parasmaipada* and *ātmanepada* suffixes are identical with the endings of the paradigmatic sets called *laṭ* and *lañ* respectively, but Pāṇini does not treat these as such. At this level these are considered generalized abstract morphological elements for all paradigms.

Here *dhātu* may be replaced by any root or derivative and *la* by one of the suffixes. Structures like *paṭh* plus *ti* are obtained by substituting *paṭh* « to recite; study » for *dhātu* and *ti* for *la*.

Now structures like *paṭh-ti* form basis of derivation of forms that are found in real language and show tense - mode distinctions which are eleven. These are designated as *laṭ*, *lañ*, *liṭ* etc. When associated with any of these paradigms, these structures are subjected to grammatical and phonological operations peculiar to each paradigm. In other words *laṭ*, *lañ* etc. serve as conditioning factors that trigger these operations. For instance, when *paṭh-ti* is considered to denote *liṭ*, the suffix *ti* changes to *ṇal* = *a* (3482); the stem is reduplicated (618) and so on. Finally is produced the form *pa-pāṭh-a* meaning « he studied and the event was not witnessed by the speaker ». Associated with *lañ*, on the other hand, the same

structure yields the form *apaṭh-at* « he studied sometime in the past excluding the current day », after application of appropriate operations.

In the three tier process of derivation, Pāṇini starts with an abstract structure, then passes on to a semi-abstract one and finally ends up producing forms found in actual use in the language.

List of *sūtras* referred to in the paper

1140	<i>ktivā-tosun-kasunaḥ</i>
1246	<i>kṛt-taddhita-samāsāśca</i>
1313	<i>bhāvakarmaṇoḥ</i>
1372	<i>svarita-ñītaḥ kartrabhiprāye kriyāphale</i>
1378	<i>śeṣāt kartari parasmaipadam</i>
1414	<i>sup-tiñantari padam</i>
1499	<i>laḥ parasmaipadam</i>
14100	<i>tañānāvātmanepadam</i>
14101	<i>tiñas trīṇi trīṇi prathamamadhyamottamāḥ</i>
14102	<i>tānyaikavacana-dvivacana-bahuvacanānyekaśaḥ</i>
2218	<i>ku-gati-prādayaḥ</i>
2222	<i>ktivā ca</i>
2369	<i>na lokāvyaya-niṣṭhā-khalartha-trṇām</i>
2435	<i>ārdhadhātuke</i>
2436	<i>ado jagdhir lyapti kiti</i>
2437	<i>luṇ sanor ghaṣṭ</i>
2442	<i>hano vadha liṇi</i>
2443	<i>luṇi ca</i>
2444	<i>ātmanepadeṣvanyatarasyām</i>
2452	<i>aster bhūḥ</i>
2453	<i>bruvo vaciḥ</i>
2482	<i>avyayād āpsupaḥ</i>
3143	<i>cli luṇi</i>
3144	<i>cleḥ sic</i>
3160	<i>ciṇ te padaḥ</i>
3162	<i>acaḥ karmakartari</i>
3166	<i>ciṇ bhāvakarmaṇoḥ</i>
3167	<i>sārvadhātuke yak</i>

3168	<i>kartari śap</i>
3177	<i>tudādibhyaḥ śaḥ</i>
3181	<i>kryādibhyaḥ śnā</i>
3183	<i>halaḥ śnaḥ śānajjhau</i>
3184	<i>chandasi śāyajapi</i>
3194	<i>vā asarūpo astriyām</i>
31133	<i>ṇvul-trcau</i>
32123	<i>vartamāne laṭ</i>
32124	<i>laṭaḥ śatṛśānacāv aprathamāsamānādhikarane</i>
3314	<i>ḷtaḥ sadvā</i>
3315	<i>anadyatane luṭ</i>
33162	<i>loṭ ca</i>
33173	<i>āśiṣi liṇ-loṭau</i>
3418	<i>alaṁ-khalvoḥ pratiṣedhayoḥ prācām ktvā</i>
3421	<i>samāna kartṛkayoḥ pūrvakāle</i>
3459	<i>avyaye ayathābhipretākhyāne kṛṇaḥ ktvā-ṇamulau</i>
3467	<i>kartari kṛt</i>
3469	<i>laḥ karmanī ca bhāve cākarmakebhyaḥ</i>
3477	<i>lasya</i>
3478	<i>tip-tas-jhi-sip-thes-tha-min-vas-mas-tātām-jha-</i> <i>thāsāthām-dhvam-iḍ-vahi-mahiṇ</i>
3479	<i>ṭita ātmanepadānām ṭer e</i>
3480	<i>thāsas se</i>
3482	<i>parasmaipadānām ṇal-atuṣ-us-thal-athus-a-ṇal-va-māḥ</i>
3485	<i>loṭo laṇvat</i>
3486	<i>eruh</i>
3487	<i>ser hyapicca</i>
3491	<i>savābhyām vāmau</i>
3492	<i>ād uttamasya picca</i>
3499	<i>nityam nītaḥ</i>
34101	<i>tas-thes-tha-mipām tāntantāmaḥ</i>
34102	<i>liṇaḥ sīyut</i>
34103	<i>yāsut parasmaipadeṣūdātto nicca</i>
34107	<i>suṭ tithoḥ</i>
34113	<i>tiṇ-śit sārva dhātukam</i>
34114	<i>ārdh dhātukam śeṣaḥ</i>
34115	<i>liṭ ca</i>

34116	<i>liṅ āśiṣi</i>
411	<i>ñyāp prātipadikāt</i>
4237	<i>tasya samūhaḥ</i>
4238	<i>bhikṣādibhyo aṅ</i>
4239	<i>gotrokṣoṣṭrorabhra-rāja-rājanya-rājaputra-vatsa-</i> <i>manuṣyājād vuñ</i>
4240	<i>kedārād yañ ca</i>
4241	<i>ṭhañ kavacinaśca</i>
4242	<i>brāhmaṇa-māṇava-vāḍavād yañ</i>
4243	<i>grām-jana-bandhubhyas tal</i>
4244	<i>anudāttāder añ</i>
4245	<i>khaṇḍikādibhyaś ca</i>
4246	<i>caranebhyo dharmavat</i>
4247	<i>acitta-hasti-dheṇoṣ ṭhak</i>
4248	<i>keśāśvābhyām yañchāv anyatarasyām</i>
4249	<i>pāsādibhyo yaḥ</i>
4250	<i>khala-go-rathāt</i>
4251	<i>ini-tra-kaṭyacaś ca</i>
6170	<i>hrasvāsyā piti kṛti tuk</i>
6176	<i>iko yañ aci</i>
63100	<i>koḥ kat tatpuruṣe aci</i>
63101	<i>ratha-vadayoś ca</i>
63102	<i>tṛṇe ca jātau</i>
63103	<i>kā pathyakṣayoḥ</i>
63104	<i>īṣadarthe</i>
63105	<i>vibhāṣā puruṣe</i>
63106	<i>kavañ coṣṇe</i>
63107	<i>paṭhi ca chandasi</i>
6435	<i>śā hau</i>
6436	<i>hanter jaḥ</i>
64101	<i>hu-jhalbhyo her dhiḥ</i>
7113	<i>ñer yaḥ</i>
7114	<i>sarvanāmmaḥ smai</i>
7128	<i>ñe prathamayor am</i>
7137	<i>samāse anañpūrve ktvo lyap</i>
7235	<i>ārdhadhātukasyeḍ valādeḥ</i>
7286	<i>yuṣmadasmador anādeṣe</i>

7287	<i>dvitīyāyām ca</i>
7288	<i>prathamāyāś ca dvivacane bhāṣāyām</i>
7289	<i>yo aci</i>
7290	<i>śeṣe lopah</i>
7291	<i>maparyāntasya</i>
7292	<i>yuvāvau dvivacane</i>
7293	<i>yūya-vayau jasi</i>
7294	<i>tvāhau sau</i>
7295	<i>tubhya-mahyau nayi</i>
7296	<i>tava-māv ekavachane</i>
7298	<i>pratyayottara padayośca</i>
7440	<i>dyati-syati-mā-sthām itti kiti</i>
7441	<i>śāchor anyatarasyām</i>
7442	<i>dadhāter hiḥ</i>
7443	<i>jahāteśca kivi</i>
7444	<i>vibhāṣā chandasi</i>
7446	<i>do dad ghoḥ</i>
7447	<i>aca upasargāt taḥ</i>
8120	<i>yuṣmadasmadoḥ ṣaṣṭhī-caturthī-dvītiyāsthayor vānnāvau</i>
8121	<i>bahuvacanasya vasnasau</i>
8122	<i>temyāv ekavacanasya</i>
8123	<i>tvāmau dvitīyāyāḥ</i>
8266	<i>sasajuṣo ruḥ</i>
8315	<i>kharavasānayor visarjanīyaḥ</i>
8337	<i>kupvo x ka Ø pau ca</i>

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NOTE: Reference to *sūtras* in the text are from serial 3 above. The first figure refers to the chapter, second to section and the rest to the *sūtra*. For instance, 32152 means chapter 3, section 2 and *sūtra* 152.